IN THE CLAIMS

Please amend claims 3, 7, 8 and 26-29 and cancel claims 1, 2, 6, 9 and 10 as follows:

1. (canceled)

2. (canceled)

3. (currently amended) The optical spectrometer of claim ~~1~~ 11 wherein the linear variable bandpass filter has

a first reflector comprising a first plurality of high-index layers and a first plurality of SiO_2 layers, the first plurality of high-index layers alternating with the first plurality of SiO_2 layers; and

a second reflector comprising a second plurality of high-index layers and a second plurality of SiO_2 layers, the second plurality of high-index layers alternating with the second plurality of SiO_2 layers wherein the tapered spacer region comprises SiO_2.

4. (original) The optical spectrometer of claim 3 wherein at least some layers of the first plurality of high-index layers comprise Ta_2O_5.

5. (original) The optical spectrometer of claim 3 wherein at least some layers of the first plurality of high-index layers comprise Nb_2O_5.

6. (canceled)

7. (currently amended) The optical spectrometer of claim ~~1~~ 11 wherein the linear variable filter has a thermal stability of less than 25 parts per million per degree Centigrade of ambient temperature change.

8. (currently amended) The optical spectrometer of claim ~~1~~ 11 wherein the linear variable filter has a thermal stability of less than 10 parts per million per degree Centigrade of ambient temperature change.

9. (canceled)

10. (canceled)

11. (original) An optical spectrometer component comprising:

a fiber optic input;

a magnifying lens disposed to expand an optical signal from the fiber optic input to

a collimating lens, the collimating lens disposed to provide a light beam to

a linear variable bandpass filter having

an etalon structure with

a tapered spacer region being tapered along a taper direction, the linear variable filter having a thermal stability of less than or equal to 50 parts per million per degree Centigrade of ambient temperature change; and

a linear optical detector array disposed along the taper direction.

B/ Cont.

12. (original) The optical spectrometer of claim 11 wherein the optical detector array has a length along the taper direction of less than or equal to 12 mm.

13. (original) The optical spectrometer of claim 11 wherein the linear variable bandpass filter has a 50% bandwidth of less than or equal to about 0.6 nm at a center wavelength, the center wavelength being between about 1530-1600 nm.

14. (original) An optical spectrometer component comprising:

a fiber optic input;

a magnifying lens disposed to expand an optical signal from the fiber optic input to

a collimating lens, the collimating lens disposed to provide a light beam to

a linear variable bandpass filter having

an etalon structure with

a tapered spacer region being tapered along a taper direction, the linear variable filter having a thermal stability of less than or equal to 50 parts per million per degree Centigrade of

ambient temperature change and a 50% bandwidth of less than or equal to about 0.6 nm at a center wavelength, the center wavelength being between about 1530-1600 nm; and

a linear optical detector array disposed along the taper direction, the linear optical detector array having a length of less than or equal to 12 mm along the taper direction.

15. (original) The optical spectrometer component of claim 14 wherein the linear optical detector array has at least 256 pixels.

16. (original) The optical spectrometer component of claim 14 wherein the linear optical detector array has at least about 512 pixels so as to provide a nominal resolution of the optical spectrometer component of about 3 Angstroms or less.

17- 25. (previously canceled)

26. (currently amended) ~~A~~ An optical transmission network comprising:

an input optical fiber configured to carry a plurality of wavelength-division-multiplexed optical signals having nominal channel spacing of about 200 GHz or less;

an output optical fiber;

an optical tap disposed between the input optical fiber and the output optical fiber and configured to couple a portion of at least some of the plurality of wavelength-division-multiplexed optical signals to

an optical spectrometer component having

a linear variable filter including an etalon structure with at least one tapered spacer region being tapered along a taper direction with a thermal stability of less than 50 parts per million per degree Centigrade of ambient temperature change, and

a detector array having *n* detectors affixed to the linear variable filter providing a nominal resolution; and

an analyzer coupled to the optical spectrometer component so as to monitor each of the some of the plurality of optical signals and having a memory with a calibration array for *m* calibration wavelengths wherein *m* is greater than *n* to provide a spectrometer resolution that is greater than the nominal resolution.

27. (currently amended) An optical spectrometer comprising:

a fiber optic input;

collimating optics;

a continuous linear variable filter having a tapered spacer region being tapered along a taper direction and having a thermal stability of less than 50 parts per million per degree Centigrade of ambient temperature change; ~~and~~

a linear optical detector array having *n* detectors disposed along the taper direction and providing a nominal resolution;

an analyzer electrically coupled to the continuous linear optical detector array including a memory storing a calibration array for *m* calibration wavelengths wherein *m* is greater than *n* to provide a spectrometer resolution that is greater than the nominal resolution and wherein, the collimating optics ~~being~~ are disposed between the fiber optic input and the linear variable filter to illuminate the linear variable filter with a collimated light beam.

B1 cont'd.

28. (currently amended) The optical spectrometer of claim 27 wherein the linear variable filter is a linear variable ~~band~~ edge filter.

29. (currently amended) An optical spectrometer comprising:

a fiber optic input;

collimating optics;

a linear variable ~~band~~ edge filter with a tapered spacer region being tapered along a taper direction; and

a linear optical detector array disposed along the taper direction, the collimating optics being disposed between the fiber optic input and the linear variable edge filter to illuminate the linear variable edge filter with a collimated light beam.

30. (previously added) An optical transmission network comprising:

an input optical fiber configured to carry a plurality of wavelength-division-multiplexed optical signals having nominal channel spacing of about 200 GHz or less;

an output optical fiber;

an optical tap disposed between the input optical fiber and the output optical fiber and configured to couple a portion of at least some of the plurality of wavelength-division-multiplexed optical signals to

an optical spectrometer having a nominal resolution less than or equal to 8 Angstroms and a thermal stability of less than 50 parts per million per degree Centigrade of ambient temperature change and including

a linear variable filter with at least one tapered spacer region being tapered along a taper direction, and

a detector array affixed to the linear variable filter; and

an analyzer coupled to the optical spectrometer component so as to monitor each of the some of the plurality of optical signals.

31. (previously added) The optical transmission network of claim 30 wherein the optical spectrometer further comprises an analog-to-digital converter to provide digital electronic signals to the analyzer.